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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/695,813	10/30/2003	Chang-Ho Liou	LI0U3010/EM	6894

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EXAMINER

MOON, SEOKYUN

ART UNIT	PAPER NUMBER
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2629

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	01/03/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	10/695,813	LIOU ET AL.	
	Examiner	Art Unit	
	Seokyun Moon	2629	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 October 2006.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5 and 7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5 and 7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. The drawings were objected to under 37 CFR 1.83(a) for not showing the feature of the invention specified in claim 8. In reply, the Applicants have canceled claim 8.

Currently, the objection is withdrawn.

2. Claim 3 was rejected under 35 U.S.C. 112, first paragraph as failing to be consistent with the feature of the invention disclosed in the specification. In reply, the Applicants have amended claim 3.

Currently the rejection is withdrawn.

3. Claim 8 was rejected under 35 U.S.C. 112, second paragraph as being indefinite. In reply, the Applicants have canceled claim 8.

Currently the rejection is withdrawn.

Response to Arguments

4. The Applicants' arguments filed on October 19, 2006 have been fully considered but they are not persuasive.

Regarding the response to the rejection of **claim 1**, the Applicants indicate that the amended claim 1 recites that the coding unit of the claimed driving circuit generates a plurality of coded data according to a plurality of characteristic curves at the same time, on page 5 lines 8-10 of the Applicants' Arguments and point out that the Naito patent has failed to meet such claim limitation since the picture signals of all three chromatic lights disclosed in the Naito patent are separately processed, on page 6 lines 2-3 of the Applicants' Arguments.

However, Examiners respectfully submits that the Applicants have failed to amend the claim to disclose such subject matter, i.e. generating a plurality of coded data according to a plurality of characteristic curves at the same time, in the claim. Since, as indicated by the Applicants, the Naito patent teaches processing the picture signals of all three chromatic lights separately and also there is nothing in the claim regarding the timing of processing the picture signals, the Naito patent would still teach the limitation of the amended portion of claim 1, *"wherein the plurality of characteristic curves are Gamma curves respectively for three primary colors R, G, B"*.

Regarding the response to the rejection of **claims 3 and 5**, the Applicants indicate that the combination of the Naito patent and the Dalke patent is not proper for the technology gap between the traditional color CRT television of the Dalke patent and a flat panel display of the Naito patent. The Applicants further indicate that flat panel displays require an entirely different sample/latch arrangement than CRTs.

However, Examiner submits that the combination is merely based on adopting an idea of including latches between D/A converters and video signal lines to hold data on the input of D/A converters for a time interval. Since any flat panel display requires to include video signal lines and D/A converters, it is obvious to use the idea of the Dalke patent of having latches between D/A converters and video signal lines.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. **Claims 1, 2, 4, and 7** are rejected under 35 U.S.C. 102(b) as being anticipated by Naito (US 6,462,735).

As to **claim 1**, Naito [fig. 2] teaches a driving circuit (a combination of "*signal-processing circuit 200*", "*amplifying block 300*", and "*data drive circuit 430*") for solving color dispersion, implemented in a flat panel display ("*liquid crystal display*") with a plurality of display cells ("*liquid crystal pixel section 410*") [col. 7 lines 64-64], the driving circuit comprising:

a coding unit ("*ASIC 210*"), to generate a plurality of coded data ("*D1', D2', D3', ..., D6'*", the modified data of "*D1, D2, D3, ..., D6*" outputted after performing gamma-correction, conversion, and polarity inversion) according to a plurality of characteristic curves [figs. 3, 4, 5, and 6] [col. 12 lines 24-40];

a reference voltage generator (a combination of "*D/A conversion block 260*" and "*amplifying block 300*"), to receive the coded data, convert the coded data from digital to analog, and generate a plurality of reference voltages ("*V1', V2', ..., V6'*") [col. 7 lines 38-43]; and

a driving unit ("*data driver circuit 430*"), to receive the reference voltages and accordingly drive the display cells [col. 8 lines 27-34].

wherein the plurality of characteristic curves are Gamma curves respectively for three primary colors R, G, B [figs. 3, 4, 5, and 6].

As to **claim 2**, Naito [fig. 2] teaches the reference voltage generator (a combination of "*D/A conversion block 260*" and "*amplifying block 300*") further to comprise a plurality of digital-analog converters ("*D/A converters 261, 262, ..., 266*") for digital to analog conversion [col. 7 lines 38-43].

As to **claim 4**, Naito [fig. 2] teaches each digital-to-analog converter (each of "*D/A converters 261, 262, ..., 266*") to input the coded data ("*D1', D2', D3', ..., D6'*", the modified data of "*D1, D2, D3, ..., D6*" outputted after performing gamma-correction, conversion, and polarity

Art Unit: 2629

inversion) through a plurality of control signal lines (lines or wires connecting the "*digital polarity reversal circuit 240*" to the plural of "*D/A converters*").

As to **claim 7**, Naito [fig. 2] teaches the driving unit ("*data driver circuit 430*") to be a data driver [col. 8 Lines 27-34].

Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. **Claims 3 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over Naito in view of Dalke et al. (US 4,183,046, herein after "Dalke").

As to **claim 3**, Naito [fig. 2] teaches the coded data to be transmitted to the digital-to-analog converters.

Naito does not teach a plurality of sample/latch units for receiving the coded data and transmitting to the plurality of digital-to-analog converters.

However, Dalke [fig. 1] teaches latch units ("*latch circuits 56 and 58*") implemented between a D/A converter ("*converter 60*") and a data communication link ("*data bus 50*"), which receives data from the communication link and transmits the received data to the D/A converter, in driving circuitry for a display device [col. 3 lines 64-68].

It would have been obvious to one of ordinary skill in the art at the time of the invention to include a plurality of latch units for each data bits outputted from the digital polarity reversal circuit between the digital polarity reversal circuit and the D/A converters in Naito's reference

Art Unit: 2629

voltage generator, to hold data on the input of D/A converters for a time interval, thus to provide a flexibility on driving time for Naito's display [col. 3 lines 60-64].

As to **claim 5**, Naito modified by Dalke as discussed with respect to the rejection of claim 3 teaches the reference voltage generator (Naito: a combination of "*D/A conversion block 260*" and "*amplifying block 300*") further comprises:

a plurality of sample/latch circuits, to receive the encoded data (Naito: "*D1', D2', D3', ..., D6'*", the modified data of "*D1, D2, D3, ..., D6*" outputted after performing gamma-correction, conversion, and polarity inversion) and apply the encoded data received to sample/latch processing (Dalke: "*to hold data on the input of D/A converters for a prescribe time interval*" [col. 3 lines 60-64]);

a plurality of digital-to-analog converters (Naito: "*D/A converters 261, 262, ..., 266*"), each having a plurality of control signal lines (Naito: lines or wires connecting the "*digital polarity reversal circuit 240*" to the plural of "*D/A converters*") to perform digital to analog conversion according to the encoded data which is outputted by the sample/latch circuit and received by the control signal lines, thereby obtaining the reference voltages [Naito: col. 7 lines 38-43]; and

a plurality of buffers (Naito: "*operational amplifiers 301, 302, ..., 306*"), to receive the reference voltages (Naito: the voltages corresponding to the amplitude of "*analog picture signal*"), enhance their output amplitudes [col. 3 lines 15-18], and output the reference voltages enhanced to data drivers (Naito: "*data driver circuit 430*").

Conclusion

9. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Seokyun Moon whose telephone number is (571) 272-5552. The examiner can normally be reached on Mon - Fri (8:30 a.m. - 5:00 p.m.).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amr Awad can be reached on (571) 272-7764. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

December 22, 2006

S.M.

AMR A. AWAD
SUPERVISORY PATENT EXAMINER

